

AMENDMENTS TO THE CLAIMS:

1. (currently amended): A radio communication apparatus comprising:

a plurality of array antennas that include an array antenna dedicated for reception which is not a parasitic element and at least one array antenna serving for both transmission and reception;

a channel quality monitoring section for monitoring channel quality of each of arriving waves received by the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a computing section for calculating a set of weights for elements of each of the array antenna dedicated for reception and the array antenna serving for both transmission and reception, the set of weights being such values as to allow each of the array antennas to function as an adaptive beam forming array antenna for reception;

a weight setting section for selecting, from the calculated set of weights, a particular set of weights for an array antenna that has received an arriving wave with maximum channel quality as monitored by the channel quality monitoring section, and for setting the particular set of weights in common to both a receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a combining section for combining arriving waves received at the receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception by use of the particular set of weights; and

feeding sections that are provided individually at feed lines on a transmission end of the array antennas serving for both transmission and reception and that applies to a transmission of a transmission wave through the feed line, the set of weights including the

particular set of weights amended adaptive to the difference in frequencies between the transmission wave and the arriving wave.

2. (currently amended): A radio communication apparatus comprising:

a plurality of array antennas that include an array antenna dedicated for reception and at least one array antenna serving for both transmission and reception which is not a parasitic element;

a channel quality monitoring section for monitoring channel quality of each of arriving waves received by the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a computing section for calculating a set of weights for elements of each of the array antenna dedicated for reception and the array antenna serving for both transmission and reception, the set of weights being such values as to allow each of the array antennas to function as an adaptive null-forming array antenna;

a weight setting section for selecting, from the calculated set of weights, a particular set of weights for an array antenna that has received an arriving wave with maximum channel quality as monitored by the channel quality monitoring section, and for setting the particular set of weights in common to both a receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a combining section for combining arriving waves received at the receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception by use of the particular set of weights; and

feeding sections that are provided individually at feed lines on a transmitting end of the array antennas serving for both transmission and reception and that applies to a transmission of a transmission wave through the feed line, the set of weights including the particular set of weights amended adaptive to the difference in frequencies between the transmission wave and the arriving wave.

3. (currently amended): A radio communication apparatus comprising:

a plurality of array antennas that include an array antenna dedicated for reception and at least one array antenna serving for both transmission and reception which is not a parasitic element;

a channel quality monitoring section for monitoring channel quality of each of arriving waves received by the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a computing section for calculating arrival angles of a desired wave and of a disturbing wave as the arriving waves for each of the array antennas dedicated for reception and the array antenna serving for both transmission and reception;

a weight setting section for selecting, from the calculated arrival angles, an arrival angle of a desired wave as an arriving wave with good channel quality as monitored by the channel quality monitoring section and an arrival angle of a disturbing wave, and for setting a particular set of weights in common to both a receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception with values to allow each of the array antennas to have a main lobe in a direction of the arrival angle of the desired wave and have a null point in a direction of the arrival angle of the disturbing wave;

a combining section for combining arriving waves received at the receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception by use of the particular set of weights; and

feeding sections that are provided individually at feed lines on a transmitting end of the array antennas serving for both transmission and reception and that applies to a transmission of a transmission wave through the feed line, the set of weights including the particular set of weights amended adaptive to the difference in frequencies between the transmission wave and the arriving wave.

4. (currently amended): A radio communication apparatus comprising:

a plurality of array antennas that include an array antenna dedicated for reception and at least one array antenna serving for both transmission and reception which is not a parasitic element;

a channel quality monitoring section for monitoring channel quality of each of arriving waves received by the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a computing section for calculating, for each of the array antenna dedicated for reception and the array antenna serving for both transmission and reception, arrival angles of a desired wave and of a disturbing wave as the arriving waves and a set of weights, the set of weights being such values as to allow each of the array antennas to function as an adaptive null-forming array antenna for reception;

a weight setting section for selecting, from the calculated arrival angles, an arrival angle of a desired wave an arriving wave with good channel quality as monitored by the channel

quality monitoring section and an arrival angle of a disturbing wave, for correcting one of the calculated sets of weights to such values as to allow an array antenna, that received an arriving wave with maximum channel quality as monitored the channel quality monitoring section, to have a main lobe in a direction of the arrival angle of the desired wave and have a null point in a direction of the arrival angle of the disturbing wave, and for setting the corrected set of weights in common to both a receiving end of the array antenna dedicated for reception and the array antenna serving for both transmission and reception;

a combining section for combining arriving waves received at the receiving end of the array antenna dedicated for reception and ~~the~~the array antenna serving for both transmission and reception by use of the corrected set of weights; and

feeding sections that are provided individually at feed lines on a transmitting end of the array antennas serving for both transmission and reception and that applies to a transmission of a transmission wave through the feed line, the set of weights including the particular set of weights amended adaptive to the difference in frequencies between the transmission wave and the arriving wave.

5. (original): The radio communication apparatus according to claim 3, wherein:

each of the plurality of array antennas is composed of elements; and

the elements of each of the array antennas are arranged on a same virtual line or plane parallel to each position of the plurality of array antennas.

6. (original): The radio communication apparatus according to claim 4, wherein:

each of the plurality of array antennas is composed of elements; and

the elements of each of the array antennas are arranged on a same virtual line or plane parallel to each position of the plurality of array antennas.

7 – 42 (Cancelled)